

Visualizing Meta-Information in Remotely Sensed Earth Science Data, Phase I

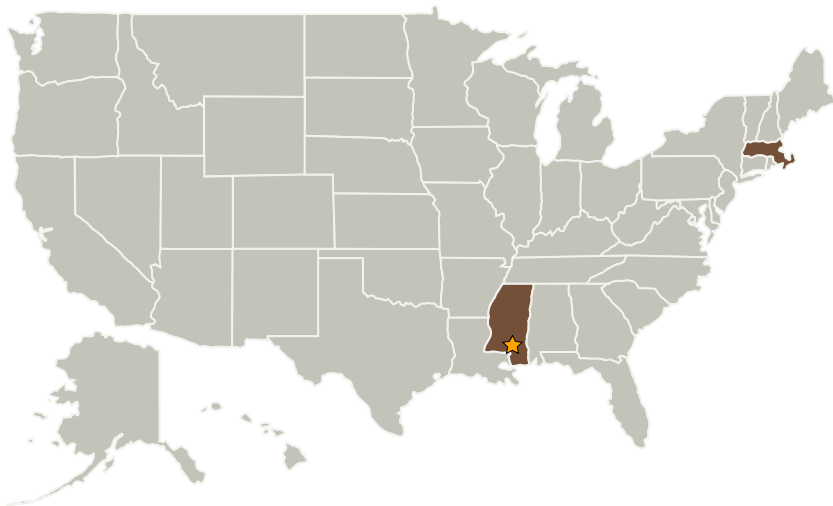
Completed Technology Project (2004 - 2004)



Project Introduction

Remotely sensed Earth Science datasets are characterized by their complexity and size, which results in difficulty in effectively disseminating this information to decision-makers. Part of this complexity is due to meta-information, or, characteristics of information such as uncertainty, staleness, etc. that add to the decision-making burden. Knowledge regarding this meta-information, and methods for effectively portraying it, have the potential of relieving the decision-maker's workload and encouraging more situationally aware decisions. To support the decision-maker, we propose to develop visual representations of meta-information in remotely sensed geospatial data. Three core components characterize the proposed approach. First, we will perform a cognitive task analysis of a selected set of case studies to develop a principled categorization of the key types and sources of information and meta-information required by the decision-maker in existing NASA display systems. Second, we will design and prototype a toolkit for augmenting incoming data with the identified meta-information types and for rapidly creating new meta-information visualization methods. This toolkit will support integration of prototype visualization methods with existing NASA display systems. Third, we will develop an evaluation methodology, including metrics of the utility of each meta-information visualization technique. We will demonstrate feasibility of our approach for Phase II development.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Stennis Space Center (SSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Stennis Space Center(SSC)	Lead Organization	NASA Center	Stennis Space Center, Mississippi
Charles River Analytics Inc.	Supporting Organization	Industry	Cambridge, Massachusetts

Primary U.S. Work Locations	
Massachusetts	Mississippi

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Jonathan D Pfautz

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.2 Extravehicular Activity Systems
 - └ TX06.2.3 Informatics and Decision Support Systems